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A Study of Nutrition

1988

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Introduction

Pinpointing trends in food preparation or usage and super market shopping habits is critical for the Food Marketing Institute and Better Homes and Gardens® magazine in staying on target with the needs of America's consumers. With a goal of tracking these trends over five years, in 1987 the Food Marketing Institute and Better Homes and Gardens commissioned a study covering these areas:

- Food patterns and meal consumption.
- Nutrition.
- Time, convenience and entertaining.
- Information sources, planning and purchasing.

This summary on nutrition contains the results of the survey among "involved" food preparers and households. Only "involved" food preparers and households are documented, because they represent the vast majority of reporting households (757 from a total of 862) and because the most interesting information comes from these.

The definition of involvement follows:

- **Involved Food Preparers:** Those male and female heads of household who reported preparing an evening meal in the household at least once a month or preparing part of an evening meal — a main dish, side dish, or dessert — at least once a week.
- **Involved Households:** Those households in which the interviewed head of household reported preparing an evening meal in the household at least once a month or part of an evening meal — a main dish, side dish, or dessert — at least once a week.

Additional summaries from this study covering 1) food-patterns and meal consumption, 2) time, convenience and entertaining and 3) information sources, planning and purchasing are available. Supermarket personnel may obtain these from the Food Marketing Institute and manufacturers from Better Homes and Gardens magazine.

Special Notes

All charts are based on the 757 "involved" food preparers/households or a subsample noted after the specific question. "Involved" food preparers and "involved" households are used interchangeably. The percentages shown in each table are calculated on the base number noted. These percentages may not add to 100% due to rounding or multiple response.

In the text, when percentages are noted for a respondent, it is assumed that the survey participant is speaking for his or her household only. Percentages with the percent sign running down are to be read across; those with the percent sign running across are to be read down.

For more specific information on the study and sampling tolerances, the methodology is found at the end of this summary.

While care has been taken to summarize study results completely, specific charts and applicable demographic groups have been selected to show the important points in the study.

Highlights on Nutrition

There is growing concern about nutrition.

Approximately seven in 10 agree that freshness and nutritional content of food are of more interest than a year or two ago. About six of 10 say interest is greater in using foods high in fiber (65%), lower in cholesterol (64%) and lower in fat (62%), as well as 59% with more interest in dieting and weight control.

Nutrition interest differs among demographic groups.

Lifestage logically creates different nutrition concerns. Probably because they are in the family formation years, younger adults, those with children and working women are most interested in broad nutrition concerns (such as the freshness of food in-store) than those with opposite demographics. However, for example, the 45 + group leads the 25-44 year olds in interest in high fiber and lower cholesterol foods.

Children increase nutrition interest.

Nearly across the board a higher percentage of those with children than without expressed more concern than a year or two ago on general and specific nutrition issues.

Red meat is still a more frequent menu item than fish or chicken, but it's a prime target for decreased consumption.

Red meat is used three or more times a week by 34% of respondents, while chicken or poultry is eaten that often by 25% and fish or seafood by 10%. Yet red meat (28%) ranks right behind eggs (29%) as the protein selected less often than a year or two ago by food preparers. By far the highest percentage (26%) say that red meat is the food item most changed in consumption over the past year or two.

The highest percentage of the sample (about one quarter) are eating fresh fruit, chicken or other poultry, fresh vegetables and fish or other seafood more often.

Twenty-six percent say they eat chicken or poultry and/or fresh fruit more often; 24% are eating fish or other seafood and/or fresh vegetables more frequently. Those 25-44 are especially likely to be increasing consumption of these foods.

About one quarter have decreased consumption of eggs, red meat, chocolate and/or ice cream.

Foods that are consumed less frequently include eggs (29%), red meat (28%), chocolate (25%) and ice cream (23%).

The "most changed" foods are protein sources: red meat, chicken or other poultry and fish or other seafood; the reasons given are health concerns and taste.

One food preparer in four (26%) reports that red meat consumption has changed most, followed by chicken or poultry (15%) and fish or seafood (11%).

Concern About Specific Nutrition Issues

- *All nutrition issues listed are of more concern to about half or more of respondents than they were a year or two ago.*
- *Two broad areas top the list: 1) the freshness of foods in stores and 2) nutritional content of food.*
- *The younger age group, those with children and working women are the most likely to express these broad concerns.*
- *Four specific topics elicit the most interest (listed in descending order): 1) using foods high in fiber, 2) trying lower cholesterol foods, 3) using lower fat items and 4) dieting and weight control.*
- *Those with children generally are most interested in both the broad and specific health issues.*

Many respondents are more concerned about health and nutrition issues than they were a year or two ago. The fact that interest is high in all areas (not just in weight control) indicates that the concern is more than just for cosmetic reasons. Of nine possible nutrition topics, 1) knowing whether foods in stores are fresh when purchased and 2) interest in the nutritional content of the foods that are eaten, were chosen by the highest percentage (69% for each) as of greater interest than a year or two ago.

Of special note is that these issues are of even greater interest to those who are likely to be heavy food consumers (survey participants in the 25-44 age group and those with children), as well as to working females.

- Seventy-one percent of those 25-44 are concerned over freshness versus 66% of those 45 or more. That's also true of 75% with children in the household but of only 67% without, as well as 74% of working but only 61% of nonworking females.
- The story on increased interest in foods' nutritional content mirrors that for freshness. Seventy-five percent of the 25-44 year olds have an increased interest versus 63% of those 45 or more. Seventy-six percent of those with children, but only 65% of those without have more interest in nutrition now. That's true of 75% of working versus 62% of nonworking females.

In addition to the two general areas of freshness and nutrition, respondents were asked about seven specific topics. Survey participants exhibit greater interest than a year or two ago in these topics (listed in descending order): using foods high in fiber (65%), using foods lower in cholesterol (64%), using foods lower in fat (62%), interest in dieting and weight control (59%), cutting down on sodium (57%), using foods low in sugar (49%) and using foods that are higher in calcium (45%). While not as dramatic as the percentages on the broad nutrition topics, there are some surprising differences in response by specific demographics. Here are the most notable areas.

- Age dictates different priorities. For example, a higher percentage of those age 45 + , versus those 25-44, are more interested in high-fiber foods (68% for the 45 + group compared to 64% for the 25-44 year olds) as well as low-cholesterol foods (67% versus 61%). The younger group is more heavily interested in low-fat foods (65% for 25-44 year olds compared to 58% for the 45 and older group), dieting and weight control (60% versus 57%) and low-sugar foods (52% compared to 46%).
- Those with children generally are more interested in specific health issues than those without children. For example, 66% with children but only 60% without youngsters use lower fat foods while 63% versus 57% care about dieting and weight control.
- Another area to target is that of two-income households. A higher percentage of those with two breadwinners are interested in lower cholesterol food (69%) and dieting/weight control (65%) than either those in households with working females (61% versus 62% respectively) or nonworking females (66% and 57% respectively).

Table 1

*"Compared with a year or two ago, would you say **your** interest and that of **other** household members in (ITEM) has increased or decreased?*

(Base = Those who are involved with cooking and meal preparation.)

	Percent Noted Increased Interest — Involved Households							
	Total	25-44	45 or More	Children in Household	No children in Household	Working Females	Nonworking Females	Two-Income Households
Concern over whether foods in stores are fresh when purchased	69%	71%	66%	75%	67%	74%	61%	71%
Interest in the nutritional content of the foods that are eaten	69	75	63	76	65	75	62	72
Using foods that are high in fiber	65	64	68	63	66	70	65	66
Using foods that are lower in cholesterol	64	61	67	65	63	61	66	69
Using foods that are lower in fat	62	65	58	66	60	66	60	64
Interest in dieting and weight control	59	60	57	63	57	62	57	65
Cutting down use of salt or other sources of sodium	57	58	57	60	56	58	59	61
Using foods that are low in sugar	49	52	46	51	48	53	49	53
Using foods that are higher in calcium	45	43	45	45	44	48	43	44
(Base)	(757)	(375)	(325)	(325)	(432)	(295)	(206)	(384)

Consumption of Specific Foods

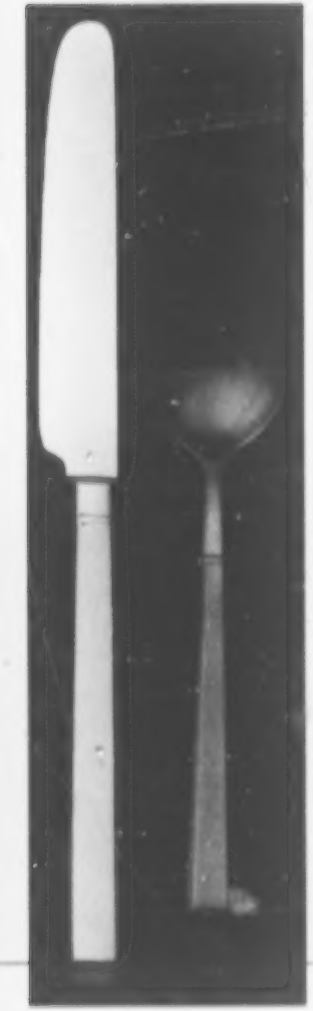
- *Fresh vegetables and fresh fruits are very popular food choices. Nearly three of four select these several times a week.*
- *Of red meat, poultry and fish, red meat is still the most frequently consumed protein source. Chicken or poultry comes in second and fish or seafood trails a distant third.*
- *Food usage differs by age group. Those 25-44 are more likely to eat cheese, chocolate and pasta more often than those 45 and over, while the older group consumes fresh fruit, fresh vegetables and ice cream on a more regular basis.*

Of eleven kinds of food, fresh fruit and fresh vegetables are the two items eaten frequently by a high percentage of survey participants. Seventy-five percent say fresh fruit and 72% say fresh vegetables are consumed three or more times a week. Following are cheese (eaten by 55% that frequently), red meat (34%), frozen vegetables (33%) and eggs (32%). Interesting, too, is that while red meat is used three or more times a week by a third of respondents, chicken or poultry is eaten that often by only 25% and fish or seafood by only 10%.

Of special note, too, is the wide variance in food consumption by age group. For example, while both the 25-44 and 45 and over groups consume fresh vegetables regularly, 82% of those 45 + have fresh vegetables three or more times a week, while that's true of only 70% of those 25-44. The same relationship is true for fresh fruit consumption. Here 77% of those 45 and older eat fresh fruit three or more times a week, but only 68% of those 25-44 do the same. On the other hand, cheese is more popular with the 25-44 age group. Sixty-one percent of those 25-44 eat cheese three or more times a week, but that's true of only 48% of those 45 and over.

Important, too, is the consumption of foods on a less regular basis. For instance, 74% of respondents 25-44 eat pasta a couple of times a month or more, but that's true of only 60% of those 45 and over. A similar pattern appears with chocolate consumption. While about the same percentage of both groups eat chocolate three or more times a week, an additional 52% of those 25-44, compared to 39% of those 45 and over, consume chocolate once or twice a week or a couple times a month.

Table 2



"And now I'd like to ask about use of various ***types of food.*** *I'd like to know how often each one is eaten in your household, and then whether that is more often or less often than a year or two ago. Beginning with (ITEM), how often does this occur in your household?"*

(Base = Those who are involved with cooking and meal preparation.)

Total Involved Households

	Total		25-44		45 and Over	
	Nearly Every Day/ Three or Four Times a Week	Once or Twice a Week/ A Couple of Times a Month	Nearly Every Day/ Three or Four Times a Week	Once or Twice a Week/ A Couple of Times a Month	Nearly Every Day/ Three or Four Times a Week	Once or Twice a Week/ A Couple of Times a Month
Fresh vegetables	75%	20%	70%	24%	82%	16%
Fresh fruit	72	20	68	25	77	14
Cheese	55	36	61	35	48	38
Red meat: such as beef, pork, lamb	34	56	36	56	33	56
Frozen vegetables	33	45	32	44	35	46
Eggs	32	52	30	55	33	51
Ice cream and other frozen desserts	27	51	23	61	31	44
Chicken or poultry	25	70	25	72	25	70
Chocolate	16	44	16	52	15	39
Pasta	11	66	13	74	9	60
Fish or seafood	10	72	9	73	12	72
(Base)	(757)		(375)		(325)	

Changes in Food Usage

- *Approximately two thirds to three quarters of respondents say consumption of selected foods has remained the same.*
- *About one quarter have increased the use of chicken or other poultry, fresh fruit, fish or other seafood and/or fresh vegetables.*
- *About one quarter have decreased consumption of eggs, red meat, chocolate and/or ice cream.*

While most food preparers say that there has been virtually no change in usage frequency for the specified types of food in the past year or two, there are some moderate increases or decreases that are significant. For each of several types of food, one household in four reports that the current level of consumption is higher than it was a year or two ago. Such is the case with chicken or other poultry (26% eat more often), fresh fruit (26%), fish or other seafood (24%) and fresh vegetables (24%). Foods that are consumed less frequently include eggs (29%), red meat (28%), chocolate (25%) and ice cream (23%).

Table 3

*"Is that **more often, less often,** or **about the same** as, say, a year or two ago?"*

(Base = Those who are involved with cooking and meal preparation and the following type of food is eaten in the household)

	Total Involved Households		
	About the Same	More Often	Less Often
Pasta	75%	13%	12%
Frozen vegetables	74	13	13
Cheese	70	16	14
Fresh fruit	70	26	4
Fresh vegetables	70	24	5
Chocolate	67	8	25
Chicken or other poultry	66	26	7
Fish or other seafood	66	24	9
Ice cream and other frozen desserts	65	12	23
Red meat: such as beef, pork, lamb	65	7	28
Eggs	64	8	29
(Base)		(737-757)	

Changes in Consumption Frequency

Among those eating fresh fruit, chicken and other poultry, fresh vegetables and fish or other seafood *more often:*

- *The growth in frequency of eating these foods is generally far greater among 25-44 year olds than their older counterparts.*
- *Consumption also is increasing for these foods among a higher percentage of those with children and working women than among those with opposite demographics.*

Among those eating eggs, red meat, chocolate and ice cream and other frozen desserts *less often:*

- *Those who are eating specified foods less often are about as likely to come equally from the 25-44 and 45 and older age groups as well as working and nonworking women categories.*
- *Households without children, compared to those with children, are more likely to eat these foods less often.*

Looking at only the totals it might be construed that a quarter of the sample across the board is eating certain foods either more or less often. But it would be misleading to think that this percentage holds firm across demographic categories, especially among those eating specific foods more often. Compare age groups, households with and without children and working versus nonworking women to discover some truly dramatic differences in increased consumption of fresh fruit, chicken or other poultry, fresh vegetables and fish or other seafood.

For example, while only 15% of the 45 and older group are eating fresh fruit more often, that's true of 36% of the 25-44 group, making the 25-44 year olds 140% more likely to be increasing fresh fruit usage than their older counterparts.

This illustrates the actual differences between the figures.

	Eat More Often		
	25-44	45 and Over	Age 25-44 Percent Above
Fresh fruit	36%	15%	+ 140%
Chicken and other poultry	28	23	+ 22
Fresh vegetables	33	14	+ 136
Fish or other seafood	31	19	+ 63

While not as striking as among the age groups, those with children and working females are significantly more likely to be eating the above named foods more often than groups with opposite demographics. For example, while 32% of those with children say fresh fruit is eaten more often, that's true of only 22% without children; 30% of working females also admit to greater fresh fruit usage; yet only 15% of nonworking females say that's the case.

But turn to the four foods which the highest percentage choose to eat less often (eggs, red meat, chocolate and ice cream and other frozen desserts) and there's less difference between the demographic groups. Approximately the same percentage of those in both age groups and among workers and nonworkers say they eat these foods less often, with the exception of eggs.

Thirty-one percent of working females eat eggs less often, while that's true of 25% of nonworking women. However, there is some difference among households with and without children. In all cases, a higher percentage without children eat the aforementioned items less often than do those with children.

Table 4

Selected "more often" and "less often" mentions from Table 3.

Involved Households — Eaten More Often

	Total	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
Fresh fruit	26%	36%	15%	32%	22%	30%	15%	29%
Chicken or other poultry	26	28	23	30	25	28	22	26
Fresh vegetables	24	33	14	30	21	29	14	28
Fish or other seafood	24	31	19	30	21	25	20	25
(Base)	(737-757)	(366-375)	(316-325)	(418-432)	(319-325)	(281-295)	(201-206)	(375-384)

Table 5

Involved Households — Eaten Less Often

	Total	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
Eggs	29%	28%	29%	24%	31%	31%	25%	28%
Red Meat: such as beef, pork, lamb	28	30	26	24	29	27	27	27
Chocolate	25	26	23	23	26	25	25	22
Ice cream and other frozen desserts	23	22	22	18	25	25	21	19
(Base)	(754-757)	(374-375)	(324-325)	(431-432)	(323-325)	(293-295)	(205-206)	(383-384)

Reasons for Changing Consumption

- *The most change from a list of specified foods is found in the consumption of red meat, chicken or poultry and fish or other seafood.*
- *Health concerns rank high among respondents making changes in protein sources, but taste is important too.*

Food preparers report that their household's sources of protein have changed the most in the past year or two. One food preparer in four reports that the household's consumption of red meat has changed the most over the past year or two (26%). An additional one food preparer in ten says that the amount of chicken or fish eaten has recently changed the most (15% and 11% respectively). Fourteen percent report that none of the foods listed represents the most change in their household consumption.

While reasons of health are expressed by a high percentage of those changing protein sources, a significant percentage say the food pleases the palate. By far, the highest percentage say the change in consumption of red meat is due to the cholesterol or high fat content of red meat (42%). (See Table 7.) A much smaller percentage (16% for each) say the switch is a result of negative media coverage and/or simply eating more chicken and fish.

About one involved food preparer in ten says that the household's consumption of red meat has changed for dietary reasons (13%), for other health reasons (12%), as well as its high cost (11%). On a positive rather than a critical note, one involved food preparer in ten refers to a preference in his or her household for the taste of red meat (9%).

Food preparers who say their household's consumption of chicken has changed the most give as their primary reasons enjoyment of chicken (29%) and the fact that chicken has less fat (26%). (See Table 8.) Two in ten also refer to the fact that chicken is lower in price (23%), it is better than red meat or a healthier type of food (21% each), and that it is easy to prepare (20%). Roughly one involved food preparer in six, or fewer, has specific health reasons in mind as the reason for a change in eating chicken (16%), a concern about salmonella or other poison in chickens (10%), or the fact that it has fewer calories (8%).

While several reasons underlie changes in consumption of fish, respondents quite often attribute the change in their households to their belief that fish is a healthier, more nutritious type of food (42%) or to the enjoyment of eating it (41%). (See Table 9). Also mentioned in this context but to a lesser extent (by two involved food preparers in ten) is the fact that the change is a result of fish having less cholesterol/fat (21%) and/or being more available (18%). About one in six gives reasons of general health concerns (16%) or ease of preparation (14%) as the impetus for the change in their household's consumption of fish.

Table 6

*"Thinking about these various types of food, for which **one** has your household's consumption changed the most in the past year or two?"*

(Base = Those who are involved with cooking and meal preparation)

	Involved Households
	Total
Red meat: beef, pork, lamb	26%
Chicken or poultry	15
Fish or seafood	11
Fresh vegetables	7
Eggs	5
Chocolate	4
Pasta	4
Fresh fruit	3
Ice cream and other frozen desserts	3
Frozen vegetables	2
Cheese	2
None	14
Don't know/no response	4
(Base)	(757)

Table 7

"Why has your household's consumption of red meat: beef, pork, lamb changed?"

(Base = Those who are involved with cooking and meal preparation and who said their household's consumption of red meat: beef, pork, lamb has changed the most)

	Involved Households
	Total
Cholesterol/fat is too high	42%
Media/negative awareness of/perception of unhealthy	16
Eat more chicken and fish	16
Diet	13
Other health reasons	12
Cost is too high	11
Like the taste/prefer red meat	9
Heart problems	6
(Base)	(203)

(Multiple Responses Accepted)
(Main Mentions)

Table 8

"Why has your household's consumption of chicken or poultry changed?"

(Base = Those who are involved with cooking and meal preparation and who said their household's consumption of chicken and poultry has changed the most)

	Involved Households
	Total
Like/enjoy chicken	29%
Less fat	26
Cheaper/less expensive	23
Better than beef or red meat/ eat less red meat	21
Healthier/more nutritional type of food	21
Easier/more ways to prepare	20
Specific health reasons	16
Fear of salmonella/poison in chickens	10
Lower in calories	8
(Base)	(116)

(Multiple Responses Accepted)
(Main Mentions)

Table 9

"Why has your household's consumption of fish and other seafood changed?"

(Base = Those who are involved with cooking and meal preparation and who said their household's consumption of fish and other seafood has changed the most)

	Involved Households
	Total
Healthier/more nutritional type of food	42%
Like/enjoy fish or seafood	41
Less cholesterol/fat	21
More available	18
For health reasons	16
Easier/more ways to prepare	14
(Base)	(82)

(Multiple Responses Accepted)
(Main Mentions)

Methodology

The data for this survey were collected from 862 telephone interviews conducted in September and October 1987 by Opinion Research Corporation. Households contacted for the survey were selected by using ORC's Random Digit Dialing (RDD) system to create a random sample of U.S. telephone households that closely approximates the total U.S. population. However, a statistical weighting procedure also was employed when the data were tabulated to bring the survey results into balance with actual universe proportions. The RDD system excludes commercial numbers and includes unlisted and new telephone numbers as well as listed numbers.

Each household was screened by the following two criteria:

1) male or female head of household
2) degree of involvement in cooking all or part of an evening meal

Heads of household who cooked all of an evening meal at least once a month, as well as those preparing part of that meal at least once a week, were considered to be "involved" food preparers living in "involved" households. Those preparing all or part of an evening meal less often than that were considered to be "uninvolved" food preparers living in "uninvolved" households. Since the vast majority were "involved" households and because "involved" respondents offer the most valuable information on food use and shopping patterns, the information in this summary has been limited only to these households.

Demographic Profile of Involved Food Preparers: 1987

	Number in Sample	Percentage
Total Involved Food Preparers	757	100%
Sex		
Men	253	37
Women	504	63
Working	295	54
Nonworking	206	44

	Total	Males	Females
Marital Status			
Married	61%	60%	61%
Single, widowed, divorced, separated	40	40	38
Spouse Works	72%	64%	76%
Age			
Under 25	6%	8%	5%
25-34	23	29	20
35-44	21	22	20
45-54	15	12	17
55-64	15	14	16
65-74	13	12	13
75 and over	7	3	9
Average Age	47 years	43 years	48 years
Education			
High school or less	47%	40%	52%
Some college/college grad.	42	47	39
Post graduate	10	13	8
Household Size			
One	24%	23%	25%
Two	33	35	32
Three	18	18	18
Four or more	25	24	25
Average Household Size	2.6	2.6	2.6
Type of Household			
With children	32%	32%	33%
Without children	66	68	66
Home Ownership			
Own home	67%	61%	71%
Rent home	33	39	29

	Total	Males	Females
Income			
Less than $20,000	32%	27%	35%
$20,000 - $39,000	33	36	32
$40,000 - $74,000	19	22	18
$75,000 or more	5	8	3
Average Income	$30,900	$35,300	$28,200
Race			
White	88%	86%	89%
Black	10	11	9
Oriental/Asian/ Pacific Indian	*	*	*
American Indian/ Alaskan Native	1	1	1
Other	2	2	1
Region			
Northeast	23%	23%	23%
North Central	25	26	25
South	34	33	34
West	17	18	17

Northeast includes Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and West Virginia.

North Central includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

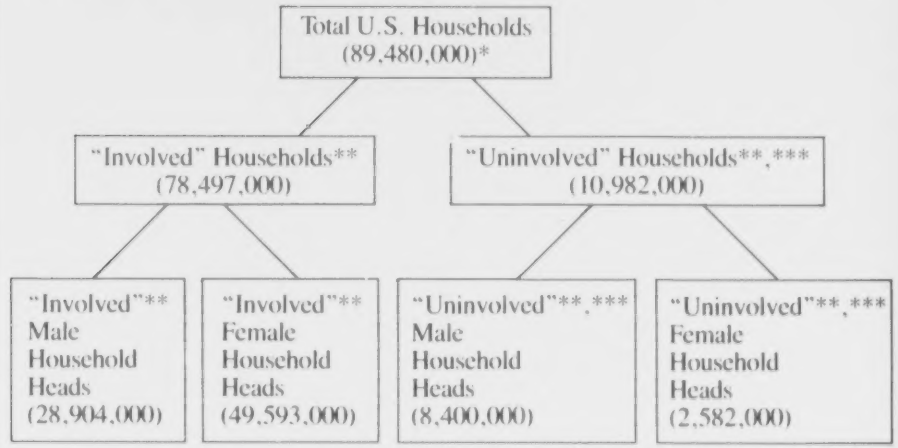
South includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

West includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

*Less than ½%.

Projectability

Because it was important that the research data be projectable to the U.S. population, the following chart illustrates the size of the universe of U.S. households* and its composition in terms of the household subgroups that were surveyed**:


Total U.S. Households (89,480,000)*
"Involved" Households** (78,497,000)
"Uninvolved" Households**,*** (10,982,000)
"Involved"** Male Household Heads (28,904,000)
"Involved"** Female Household Heads (49,593,000)
"Uninvolved"**,*** Male Household Heads (8,400,000)
"Uninvolved"**,*** Female Household Heads (2,582,000)

*Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 411, **Households and Family Characteristics: March 1987,** U.S. Government Printing Office, Washington, D.C., 1987 (Issued September 1987).

**For each of these subgroups the estimates are based on the level of incidence obtained during the interviewing process.

***It is important to note that these sub-universe estimates may overstate the true number of households in which *both* household heads are "uninvolved" food preparers. This is due to the fact that the operational definition of an "uninvolved" household used in this study is based on information about the interviewed head of household and does not directly take into account information about the other household head's level of involvement in food preparation.

Sampling Variation

With any study the results are subject to sampling variation i.e., the difference between survey results and those that would be gathered by studying the entire population. In general, sampling variation is less when the size of the sample is large and the sample result approaches 0% or 100%, rather than being in a middle range. The following table shows the approximate range of sampling variation for involved males and females, two major groups described in this study. For example, in Table 1, 71% of those 25-44 are concerned over whether foods in stores are fresh. This percentage is based on the sample of about 370 respondents 25-44. The table below shows that the sample variation for a 70% response at that base is plus or minus 5%.

Sampling Tolerances (+/−) at 95% Confidence Level for Involved Males and Females

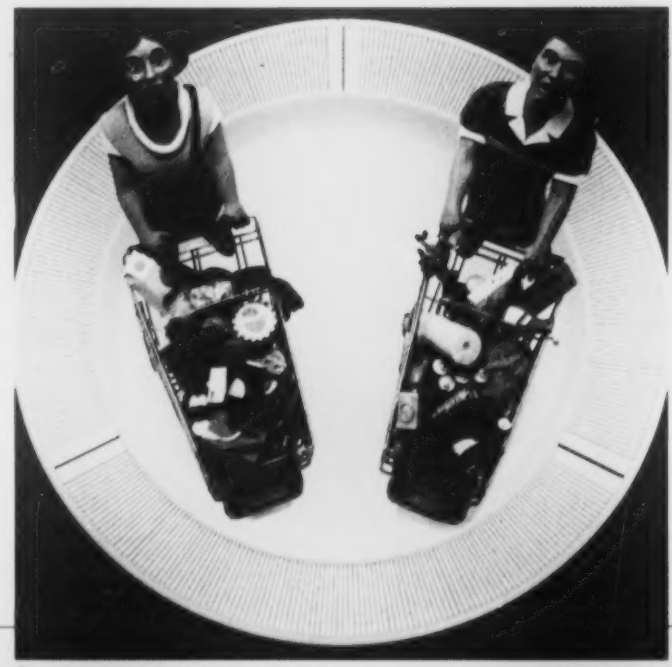
Sample Size	Type of Group	Approximate Sampling Tolerances 10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
370	Respondents 25-44	3%	4%	5%	5%	5%
320	Respondents 45 and over	3%	4%	5%	5%	5%

Applying the sampling variation to the 71% response, the true proportion of 25-44 year olds with concern over freshness should be no less than 66% nor more than 76%.

In addition to the sampling variation that can be figured for a single piece of data, it's also helpful to determine whether the differences *between* certain percentages are real or the result of sampling variation. Looking at Table 1 again, while 71% of 25-44 year olds have a concern over freshness, the same is true of 66% of 45 and over respondents. The 25-44 year old data is based on 375 responses and the 45 and over on 325 responses. The sampling tolerance is 6% and since there's a 5% differential between the two percentages, this finding is not statistically significant.

Sampling Tolerances (at 95% Confidence Level) To Use in Evaluating Differences Between Two Percentage Results

Sample Comparison	Approximate Sampling Tolerances 10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
Various Key Subgroup Comparisons					
757 vs. 375	4%	5%	6%	6%	6%
325	4%	5%	6%	6%	6%
375 vs. 325	4%	5%	6%	6%	7%
432 vs. 295	4%	6%	7%	7%	7%
384 vs. 295	5%	6%	7%	7%	8%
206	5%	7%	8%	8%	8%



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A Study of Information Sources, Planning and Purchasing

1988

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and Better Homes and Gardens Magazine
by Opinion Research Corporation

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Introduction

Pinpointing trends in food preparation or usage and supermarket shopping habits is critical for the Food Marketing Institute and Better Homes and Gardens® magazine in staying on target with the needs of America's consumers. With a goal of tracking these trends over five years, in 1987 the Food Marketing Institute and Better Homes and Gardens commissioned a study covering these areas:

- Food patterns and meal consumption.
- Time, convenience and entertaining.
- Nutrition.
- Information sources, planning and purchasing.

This summary on information sources, planning and purchasing contains the results of the survey among "involved" food preparers and households. Only "involved" food preparers and households are documented, because they represent the vast majority of reporting households (757 from a total of 862) and because the most interesting information come from these.

The definition of involvement follows:

- **Involved Food Preparers:** Those male and female heads of household who reported preparing an evening meal in the household at least once a month or preparing part of an evening meal — a main dish, side dish, or dessert — at least once a week.
- **Involved Households:** Those households in which the interviewed head of household reported preparing an evening meal in the household at least once a month or part of an evening meal — a main dish, side dish, or dessert — at least once a week.

Additional summaries from this study covering 1) food patterns and meal consumption, 2) nutrition and 3) time, convenience and entertaining are available. Supermarket personnel may obtain these from the Food Marketing Institute and manufacturers from Better Homes and Gardens magazine.

Special Notes

All charts are based on the 757 "involved" food preparers/households or a subsample noted after the specific question. "Involved" food preparers and "involved" households are used interchangeably. The percentages shown in each table are calculated on the base number noted. These percentages may not add to 100% due to rounding or multiple response.

In the text, when percentages are noted for a respondent, it is assumed that the survey participant is speaking for his or her household only. Percentages with the percent sign running down are to be read across; those with the percent sign running across are to be read down.

For more specific information on the study and sampling tolerances, the methodology is found at the end of this summary.

While care has been taken to summarize study results completely, specific charts and applicable demographic groups have been selected to show the important points in the study.

Highlights on Information Sources, Planning and Purchasing

Supermarket services are not seen as planning tools by most respondents.

Only one in five (20%) survey participants agree that they use special supermarket services to a great/some extent in planning the household's meals.

Printed material is the top choice when seeking cooking and meal preparation ideas.

Seventy-five percent of respondents say cookbooks, 63% pinpoint health/nutrition books and 56% target family/women's magazines as very/fairly useful information sources.

The use of information sources differs by demographic group.

Women are more apt to use nearly all information sources than men. Those 25-44 are more likely to find cookbooks (80%), plus information from relatives (59%) and/or friends (53%) very/fairly useful than are their older counterparts. A significantly higher percentage of respondents with children turn to two of the top three information sources than do those in childless households.

The majority plan at least a few days ahead for food purchases; women/households with children are the likeliest to plan ahead.

Fifty-seven percent of respondents plan purchases a week or more in advance. Possibly because women shoulder a great deal of the cooking load, they (61%) are more likely than men (51%) to plan purchases a week or more ahead. Working women (60%) and nonworking women (62%) are equally likely to plan a week or more ahead. In fact 19% of

working women versus 13% of nonworking women plan more than a week in advance.

Health concerns motivate respondents to search labels/packages on new products.

Of the eleven highest concerns noted by survey participants, seven involve health issues. Twenty-three percent of respondents look for sodium/salt content, 19% nutritional content and 17% check calories.

Nearly three of 10 request packaging changes from the food industry.

Twenty-seven percent say they'd like to see a change in packaging and 18% would like relief from "high" food prices and/or have a concern about additives/preservatives.

Supermarket Services

- *One in five use special supermarket services such as menu suggestions and recipes to a great or to some extent.*
- *About eight of 10 do not use these services with any frequency for planning.*
- *Those older (versus younger respondents) are the most likely to use these services.*

Special services provided by the supermarket influence to any significant degree one in five (20%) survey participants in the planning of the household's meals. However, eight of 10 (79%) say their planning is influenced to little or no extent by supermarketers' efforts in this area. The explanation for this high figure may in part be due to several factors. Among them are the fact that 1) these services may still not be available in many supermarkets, 2) they're not available on a regular basis and/or 3) that respondents don't view these as *planning* tools.

Though there are no large differences in the opinions of the various demographic groups, two groups deserve special notice. Those older (45 or more) find supermarket services somewhat more helpful. Twenty-two percent of the 45 and overs utilize these items to a great degree or some extent, while only 16% of the 25-44 year olds agree. Nonworking females are generally more likely (24%) than working females (19%) or those in two-income households (17%) to plan with these special extras that supermarkets provide.

Table 1

"To what extent do special services provided by the supermarket such as menu suggestions, recipes and food tastings, influence how you plan the household's meals? To a great extent, to some extent, or to little or no extent at all?"

(Base = Those who are involved with cooking and meal preparation and who plan ahead what food will be bought for the household)

Involved Households

	Total	Males	Females	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
To a great extent	3%	2%	3%	2%	4%	3%	3%	2%	4%	2%
	20%	17%	21%	16%	22%	18%	21%	19%	24%	17%
To some extent	17	15	18	14	18	15	18	17	20	15
To little / no extent at all	79	81	77	83	74	82	77	81	75	82
Don't know / no opinion	2	2	2	1	4	*	3	*	1	2
(Base)	(733)	(235)	(498)	(368)	(311)	(320)	(413)	(293)	(202)	(373)

Information Sources

- *Cookbooks, health and nutrition books and family/women's magazines are the most useful sources for cooking and meal preparation ideas.*
- *Women are more likely than men to consider a variety of information sources very/fairly useful.*
- *Younger respondents are more likely than those older to depend on cookbooks, relatives and/or friends for information.*
- *Those with children find cookbooks and family/women's magazines more useful sources of information than those without youngsters.*
- *Working women are more likely to depend on cookbooks and/or to tap relatives for planning ideas than their nonworking counterparts.*

The top three sources of information about cooking and meal preparation are 1) cookbooks (75% use), 2) health books (63% use), 3) magazines (56% use)*. Nearly across the board men are less likely to find the information sources listed very/fairly useful than women, but even so seven of 10 (68%) use cookbooks, six of 10 (59%) health books and more than four of 10 (43% and 44% respectively) pull ideas from magazines and/or newspapers. Part of the reason women outpace men in use of information sources may be that women cook with greater frequency and may need more fresh ideas than men or that they're in the habit of using these information sources.**

Sex is a determinant in selecting information sources, but age and lifestage are important too. Consider the differences between the 25-44 year olds and those 45 and over. Those 25-44 are more likely to agree that they find the following very/fairly useful than are those 45 and over: cookbooks (80% for 25-44 years versus 72% for the 45 plus group), relatives (59% versus 42%) and/or friends (53% versus 43%). A higher percentage of those 45 and over find newspapers and supermarkets very/fairly useful than do those 25-44. (Sixty-three percent of the 45 plus group select newspapers versus 49% of those 25-44; 48% of the 45 and over group pick supermarkets versus 36% of the 25-44 year olds.)

Children create a climate for cooking***, so it's not surprising that a higher percentage of those in households with children find two of the top three information sources very/fairly useful than do those in households without children. Cookbooks are picked by 82% of those with children versus 71% of those without youngsters and magazines by 64% versus 52%. On the other hand, 46% of those in childless households find supermarkets very/fairly useful information sources, but only 36% of those with children agree.

An interesting story develops from the figures revealing information sources for working/nonworking women and two-income households. (The following refer to those who consider the noted sources very/fairly useful for information.)

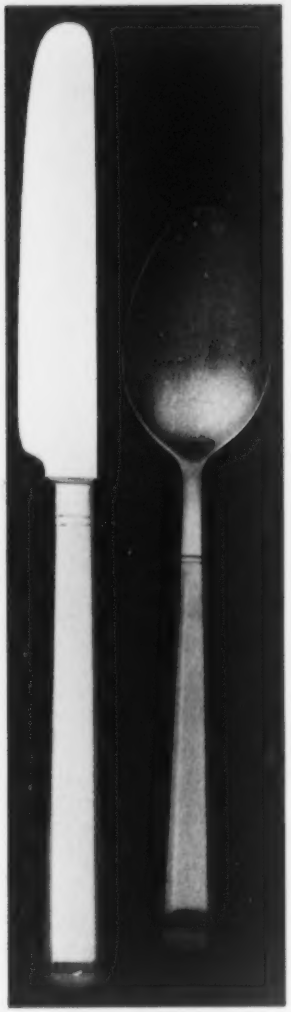
- **Cookbooks.** A higher percentage of working females (82%) and those in two-income households (84%) turn to cookbooks than do nonworking females.
- **Magazines.** A larger percentage in all three groups turn to magazines more frequently than does the average (56%) survey participant: working females (62%), nonworking females (67%), two-income households (68%).
- **Relatives.** Relying on relatives for cooking advice is more apparent among working women (56%) and those in two-income households (56%) than among nonworking women (47%).

*For ease in the information sources noted "cookbooks and other food-related books" will be referred to as "cookbooks," "books on health or nutrition" as "health" books, "family magazines or women's magazines" as "magazines" and "food columns in newspapers" as "newspapers."

**The question of time spent on food preparation is covered in the study segment on time, convenience and entertaining.

***The question of children and cooking is covered in the study segment on food patterns and meal consumption.

Table 2



"I'm going to mention some different sources of information about cooking and meal preparation. For each one, would you please tell me whether it is very useful, fairly useful, not particularly useful, or not at all useful to you in providing worthwhile information on cooking and meal preparation."

(Base = Those who are involved with cooking and meal preparation)

	Very/Fairly Useful Involved Households									
	Total	Males	Females	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
Cookbooks or other food-related books	75%	68%	79%	80%	72%	82%	71%	82%	74%	84%
Books on health or nutrition	63	59	64	61	65	64	62	63	66	64
Family magazines or women's magazines	56	43	64	58	57	64	52	62	67	68
Food columns in newspapers	55	44	62	49	63	53	56	58	64	58
Relatives	52	51	52	59	42	56	50	56	47	56
Friends or neighbors	48	44	51	53	43	48	48	52	51	49
Television programs	44	44	44	43	46	46	43	42	45	45
Supermarkets	42	37	45	36	48	36	46	43	46	36
Cooking classes or courses	16	13	18	15	16	17	15	19	16	15
(Base)	(757)	(253)	(504)	(375)	(325)	(325)	(432)	(295)	(206)	(384)

Planning Ahead

- *Planning a week or more ahead for food purchases is the norm for nearly six of 10 (57%) respondents.*
- *Women and households with children are the most likely to plan ahead for food purchases.*
- *There is little difference between the percentage of working (60%) and nonworking (62%) women planning a week or more ahead.*

The chart on planning ahead for food purchases reveals that there's a wide variance among survey participants in planning for food purchases. The figures indicate that while there's a segment of the population that's motivated by day-to-day impulse, there are much larger segments planning a week or more ahead.

Seventeen percent of the respondents say they plan food purchases day by day. Those 25-44 are more apt to be planning this way (20%) than are older respondents (13%). The same relationship is true of working women (19%) versus nonworking women (12%).

Yet, the real story seems not among the frequent planners so much as among those who plan for the long term. For example, it's surprising that in this fast-paced world nearly six of 10 (57%) plan purchases a week or more in advance. It's also revealing to see how this function is handled for specific demographic groups. Women (61%) are much more likely than men (51%) to plan purchases a week or more ahead. Similarly, when respondents have children their shopping list often is compiled further in advance. Sixty-four percent with youngsters plan food buying a week or more ahead, while only 54% of those without children do so.

It's interesting, too, that no matter whether the female is working or not, planning ahead for purchasing remains high. About six of ten working women (60%), nonworking women (62%) and two-income households (62%) plan a week or more ahead. One especially interesting note, too, is that working women are more likely to plan way ahead than are their nonworking sisters. Nearly one in five (19%) female workers plan food purchasing more than one week in advance; the same is true of only 13% of nonworkers. On the surface these statistics may seem puzzling. After all, wouldn't it seem more likely that working women, for example, would be planning purchases day by day in their busy environment? Yet the statistics may be showing that busy people, such as those with children and working women, find that planning food purchases far in advance means both time savings and flexibility. (For example, on an unexpectedly busy night, it's easier to whip up a quick meal from a stocked larder than it is to make an extra stop at the supermarket.)

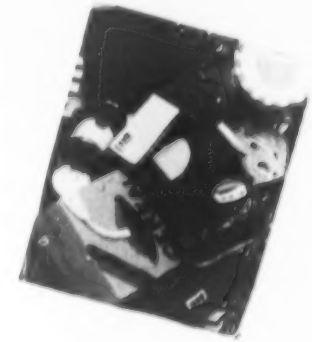


Table 3

*"How far ahead would you say you plan what **foods will be bought** for the household: Do you plan day by day; for the next few days; a week ahead; or more than a week ahead?"*

(Base = Those who are involved with cooking and meal planning)

Involved Households

	Total	Males	Females	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
Day by day	17%	19%	16%	20%	13%	15%	18%	19%	12%	14%
Next few days	20	21	20	20	20	19	21	19	21	20
Week ahead	43	39	45	41	46	46	42	41	49	48
	57%	51%	61%	57%	58%	64%	54%	60%	62%	62%
More than a week	14	12	16	16	12	18	12	19	13	14
Don't plan the household's meals	4	7	1	2	5	2	5	1	2	4
Other	2	1	2	1	3	1	2	1	2	1
(Base)	(757)	(253)	(504)	(375)	(325)	(325)	(432)	(295)	(206)	(384)

Time/Effort Planning

- *About half of respondents say they spend at least a fair amount of time and effort planning meals.**
- *Women are far more likely to spend time planning than are men.*
- *Women, households with children and nonworking women are the most likely to spend a significant amount of time planning.*

Planning takes a good deal of time and effort for nearly half (45%) of survey participants. Seven percent say "a lot" and 38% agree that "a fair amount" of time is spent. Only about one in five (22%) admits to spending almost no time planning.

A significant portion of those spending almost no time planning are males. In fact, nearly three-quarters (72%) of males spend just a little or almost no time planning compared to only 45% of women. Conversely, 28% of men versus 54% of women agree they take a fair amount of time or more in the planning process, possibly indicating that women are still cooking the more complex meals.

Youngsters in the household create a climate for planning also. Fifty-six percent of those with children employ a fair amount of time or more in the planning process; that's true of only 40% of those without children.

Because their nonworking status may afford them more planning minutes, it's not surprising that nonworking women say they spend the most time planning. Two thirds (66%) put in a lot or fair amount of time versus 43% for working females.

*In future references, "time and effort" will be referred to as "time."

Table 4

*"In a typical week, would you say you spend a lot of **time** and **effort** in **planning the household's meals**, you spend a fair amount of time and effort, just a little, or almost none?"*

(Base: Those who are involved with cooking and meal preparation)

	Involved Households							
	Total	Males	Females	Children in Household	No Children in Household	Working Females	Nonworking Females	Two-Income Households
A lot of time and effort	7%	4%	8%	9%	6%	7%	10%	7%
Fair amount	38	24	46	47	34	36	56	44
	45%	28%	54%	56%	40%	43%	66%	51%
Just a little	33	39	30	27	36	37	22	34
Almost none	22	33	15	17	24	19	11	15
Don't know/ no opinion	1	*	1	*	1	0	1	*
(Base)	(757)	(253)	(504)	(325)	(432)	(295)	(206)	(384)

*Less than ½%

Concerns about Packaging

- *Health issues dominate when respondents consult the label/package of a new product.*
- *Demographics affect what information is sought on packages (e.g., those 45 and over have a strong interest in sodium/salt content).*
- *Women are much more likely than men to be interested in salt/sodium.*

Health concerns are by far more interesting to survey participants when checking a new product's label or package than other issues. Of eleven concerns noted by the highest percentage responding to this question, seven involve health-related issues. The highest percentage (31%) say they are most likely to check the label to determine the ingredients. Here are how the other health topics rank:

Rank of Top Health Concerns on a Package/Label	Specific Interest
#2	Sodium/salt content (23%)
#4	Nutritional content (19%)
#5	Calorie count (17%)
#6	Sugar (17%)
#7	Chemicals/additives (16%)
#8	Fat content (13%)
#9	Low cholesterol (10%)

Other items that concern survey participants include price (22%), preparation instructions (12%) and attractiveness (11%).

It's interesting to note that the percentages are fairly even across the spectrum of demographics. However, there are instances of variation. Not surprisingly, those in the older age groups (45 or more) show a greater concern over the salt/sodium content (28%) and cholesterol (13%) than do those in the 25-44 age range (20% and 6% respectively). It was revealed in another segment of this study that nutrition interest was higher in households with children.* Similarly, those with youngsters tend to read labels for nutrition information (22%) than are those without youngsters (17%). Chemicals/additives in food also are of more interest to these family-oriented households (22%) than to those without children (13%).

One puzzling dichotomy is the difference between men's and women's reactions to certain nutrition issues. Because of weight control, one might expect women to be more concerned for example about calories (19% of women read labels to find this information versus 14% for men), but it's puzzling to see that 27% of women consult labels for salt content versus only 18% for men. In effect this says that women are 50% more likely to consult the label than men.

*The question of children and nutrition is covered in the study segment on nutrition.

Table 5

"When you see a new food product you are interested in buying, what, if anything, do you look for on its label or package?"

(Base = Those who are involved with cooking and meal preparation)

Involved Households

	Total	Males	Females	25-44	45 or More	Children in Household	No Children in Household	Working Females	Nonworking Females
Ingredients / contents / natural ingredients (general mentions)	31%	30%	31%	31%	31%	29%	32%	31%	32%
Sodium / salt content	23	18	27	20	28	21	25	25	30
Price	22	22	21	24	19	25	20	23	21
Nutritional content / focus on nutritional references	19	21	17	21	16	22	17	19	15
Sugar	17	11	21	18	16	19	16	23	19
Calorie count	17	14	19	19	16	16	18	20	19
Chemicals and additives in the food / whether it has preservatives	16	16	16	20	14	22	13	19	15
Fat content	13	10	15	12	14	11	14	14	15
Ease of preparation / instructions on how to make it / method of cooking it	12	12	12	14	10	15	10	15	8
If it's appealing to me, I buy it / attractiveness / design of the product	11	13	11	10	12	9	13	11	11
Not too much cholesterol / low cholesterol	10	10	9	6	13	7	11	9	10
(Base)	(757)	(253)	(504)	(375)	(325)	(325)	(432)	(295)	(206)

(Multiple Responses Accepted)

(Main Mentions)

Suggested Food Industry Changes

- *Survey participants would most like to see the food industry make changes in packaging.*
- *The concerns tying for second and third are a desire for change in additives/preservatives and relief from high prices.*
- *In most cases, the 25-44 year old group wants more changes than those 45 and over.*

Packaging issues are of concern to the highest percentage of respondents (27%) when asked to pinpoint one area where they'd like to see a change in the food industry. Other items singled out for change include additives/preservatives (18%), food prices (18%), selection of food (8%) and freshness (6%). One in 10 see no need for change or improvements.

Those 25-44 are more interested in changes than those 45 and over, except in the area of prices (15% of 25-44 year olds think prices are too high versus 19% of those 45 or more). For example, while 31% of the 25-44 year olds have a concern over packaging issues that's true of only 24% of those 45 and over. In fact, while 15% of those 45 and over see no need for changes/improvements, that's true of only 5% of the 25-44 year olds.

Table 6

"Thinking very broadly, what one thing would you like to see changed in the food industry — it could have to do with foods themselves, packaging of foods, or the stores and supermarkets where food is sold."

	Involved Households		
	Total	25-44	45 or More
Packaging issues (NET)	27%	31%	24%
List all ingredients/calories	9	11	7
Smaller portions for single people	5	3	7
Concerns about additives/preservatives (NET)	18	20	16
More natural food without chemicals/preservatives	10	15	5
Salt	5	3	8
Prices too high	18	15	19
Increase in selection of food (NET)	8	9	8
Fresh (increase selection of fresh foods)	5	4	5
Concerns regarding freshness (NET)	6	7	5
Fresher produce/products	5	6	4
No improvements/changes needed	10	5	15
(Base) *(Main Mentions)*	(757)	(375)	(325)

Methodology

The data for this survey were collected from 862 telephone interviews conducted in September and October 1987 by Opinion Research Corporation. Households contacted for the survey were selected by using ORC's Random Digit Dialing (RDD) system to create a random sample of U.S. telephone households that closely approximates the total U.S. population. However, a statistical weighting procedure also was employed when the data were tabulated to bring the survey results into balance with actual universe proportions. The RDD system excludes commercial numbers and includes unlisted and new telephone numbers as well as listed numbers.

Each household was screened by the following two criteria:

1) male or female head of household
2) degree of involvement in cooking all or part of an evening meal

Heads of household who cooked all of an evening meal at least once a month, as well as those preparing part of that meal at least once a week, were considered to be "involved" food preparers living in "involved" households. Those preparing all or part of an evening meal less often than that were considered to be "uninvolved" food preparers living in "uninvolved" households. Since the vast majority were "involved" households and because "involved" respondents offer the most valuable information on food use and shopping patterns, the information in this summary has been limited only to these households.

Demographic Profile of Involved Food Preparers: 1987

	Number in Sample	Percentage
Total Involved Food Preparers	757	100%
Sex		
Men	253	37
Women	504	63
Working	295	54
Nonworking	206	44

	Total	Males	Females
Marital Status			
Married	61%	60%	61%
Single, widowed, divorced, separated	40	40	38
Spouse Works	72%	64%	76%
Age			
Under 25	6%	8%	5%
25-34	23	29	20
35-44	21	22	20
45-54	15	12	17
55-64	15	14	16
65-74	13	12	13
75 and over	7	3	9
Average Age	47 years	43 years	48 years
Education			
High school or less	47%	40%	52%
Some college/college grad.	42	47	39
Post graduate	10	13	8
Household Size			
One	24%	23%	25%
Two	33	35	32
Three	18	18	18
Four or more	25	24	25
Average Household Size	2.6	2.6	2.6
Type of Household			
With children	32%	32%	33%
Without children	66	68	66
Home Ownership			
Own home	67%	61%	71%
Rent home	33	39	29

	Total	Males	Females
Income			
Less than $20,000	32%	27%	35%
$20,000 - $39,000	33	36	32
$40,000 - $74,000	19	22	18
$75,000 or more	5	8	3
Average Income	$30,900	$35,300	$28,200
Race			
White	88%	86%	89%
Black	10	11	9
Oriental/Asian/ Pacific Indian	*	*	*
American Indian/ Alaskan Native	1	1	1
Other	2	2	1
Region			
Northeast	23%	23%	23%
North Central	25	26	25
South	34	33	34
West	17	18	17

Northeast includes Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and West Virginia.

North Central includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

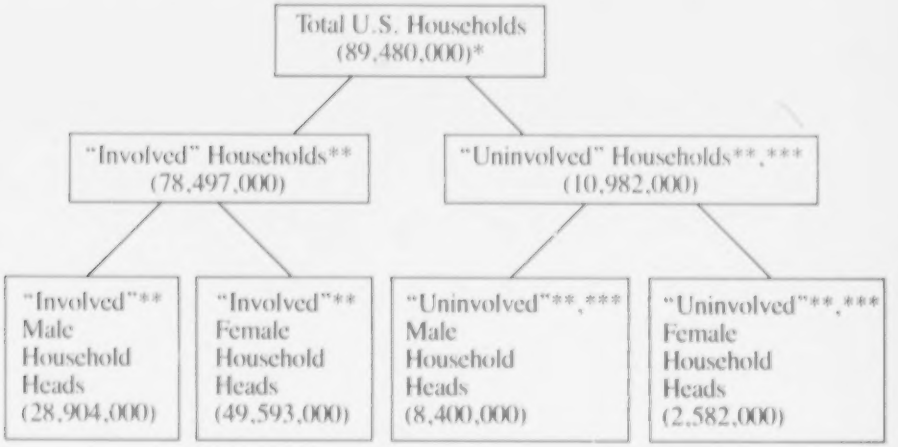
South includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

West includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

*Less than ½%.

Projectability

Because it was important that the research data be projectable to the U.S. population, the following chart illustrates the size of the universe of U.S. households* and its composition in terms of the household subgroups that were surveyed**:


Total U.S. Households (89,480,000)*
"Involved" Households** (78,497,000)
"Uninvolved" Households**,*** (10,982,000)
"Involved"** Male Household Heads (28,904,000)
"Involved"** Female Household Heads (49,593,000)
"Uninvolved"**,*** Male Household Heads (8,400,000)
"Uninvolved"**,*** Female Household Heads (2,582,000)

*Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 411, **Households and Family Characteristics: March 1987,** U.S. Government Printing Office, Washington, D.C., 1987 (Issued September 1987).

**For each of these subgroups the estimates are based on the level of incidence obtained during the interviewing process.

***It is important to note that these sub-universe estimates may overstate the true number of households in which *both* household heads are "uninvolved" food preparers. This is due to the fact that the operational definition of an "uninvolved" household used in this study is based on information about the interviewed head of household and does not directly take into account information about the other household head's level of involvement in food preparation.

Sampling Variation

With any study the results are subject to sampling variation, i.e., the difference between survey results and those that would be gathered by studying the entire population. In general, sampling variation is less when the size of the sample is large and the sample result approaches 0% or 100%, rather than being in a middle range. The following table shows the approximate range of sampling variation for involved males and females, two major groups described in this study. For example, in Table 1, 83% of 25-44 year olds say supermarket services influence planning to a little or no extent. This percentage is based on the sample of about 370 respondents 25-44. The table below shows that the sample variation for an 83% response at that base is plus or minus 4%.

Sampling Tolerances (+ / −) at 95% Confidence Level for Involved Males and Females

Sample Size	Type of Group	Approximate Sampling Tolerances 10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
370	Respondents 25-44	3%	4%	5%	5%	5%
310	Respondents 45 and over	3%	4%	5%	5%	5%

Applying the sampling variation to the 83% response, the true proportion of the 25-44 year olds should be no less than 79% nor more than 87%.

In addition to the sampling variation that can be figured for a single piece of data, it's also helpful to determine whether the differences *between* certain percentages are real or the result of sampling variation. Looking at Table 1 again, while 83% of 25-44 year olds do not use supermarket services, the same is true of 74% of 45 and over respondents. The 25-44 year old data is based on 368 responses and the 45 and over on 311 responses. The sampling tolerance is 6% and since there's a 9% differential between the two percentages, this finding is statistically significant.

Sampling Tolerances (at 95% Confidence Level) To Use in Evaluating Differences Between Two Percentage Results

Sample Comparison	Approximate Sampling Tolerances 10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
Various Key Subgroup Comparisons					
757 vs. 370	4%	5%	6%	6%	6%
310	4%	5%	6%	6%	7%
370 vs. 310	5%	6%	7%	7%	7%
432 vs. 295	4%	6%	7%	7%	7%
384 vs. 295	5%	6%	7%	7%	8%
206	5%	7%	8%	8%	8%